

ABSTRACT OF THE DISCLOSURE

A power inverter includes a regulator circuit that controls real and reactive power output by the inverter. The regulator measures real and reactive output power by calculating x-phasor components of the inverter's voltage and current output waveforms. Phasor calculation can be adapted for one or more pairs of single-phase voltages and currents. Determining the fundamental in-phase and quadrature components of output voltage and current reduces computational complexity by permitting the regulator to perform its power control processing largely in a dc signal domain, and enables separate real and reactive power control. The power inverter can include islanding detection logic, which exploits the ability to separately control reactive power. Exemplary islanding detection logic is based on determining whether changing the amount of reactive power output by the inverter induces an output frequency shift.